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28 March 1963

MEMORANDUM FOR THE RECORD

SUBJECT : OXCART Flight Test Status: 27 March

1. Aircraft #121 (J-58 engines) made flight #59 on 27 March for a duration of forty-six minutes with a Lockheed test pilot at the controls. The purpose of the flight was to extend the flight envelope. The takeoff, climb and acceleration were good with Mach 2.53 attained at 65,000 feet. This is the highest Mach number reached in flight test. Instrumentation of the spike control schedule, adjusted two inches aft for this flight, and by-pass door operation, operated manually during the flight, should shed some light on duct rumble problems encountered on recent flights at higher Mach numbers. Just prior to entry into the downwind leg, the pilot dumped fuel in preparation for landing. However, the fuel dump valve failed in an open position and fuel continued to be dumped until engine shutdown after landing. Fortunately, sufficient fuel remained to complete the landing. The landing was normal with good chute deployment. It is apparent that a reliable fail-safe feature is required in the fuel dump system to preclude the possibility of a dump valve failure in an open position.

2. Aircraft #122 (J-58 engines) made flight #9 on 27 March for a duration of fifty-six minutes with a Lockheed test pilot at the controls. The purpose was to extend the flight envelope. For this flight the inlet control spike schedule was one and one-half inches further aft and fixed stops in by-pass doors were incorporated to keep them 1.75 inches from full closed. The by-pass doors are left in this position at speeds above Mach 1.4 for this flight. The takeoff, climb and acceleration were normal to Mach 1.4 at 40,000 feet, at which point the spike was placed in automatic mode and by-pass doors closed to the stop position. The pilot accelerated to Mach 2.27 at about 60,000 feet where roughness was encountered and then on out to Mach 2.35. At this point the experiment was halted when the left engine fire warning light came on. The pilot reduced both engines to military power and checked the left nacelle temperature

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selector which appeared to give all indications of a fire. The left engine fire warning light stayed on, at which point the pilot reduced the left throttle to idle and the fire warning light remained on. The pilot then cut off the left engine and shut off the left engine emergency cutoff switch, at which time the aircraft was at about Mach 2.28. Shortly thereafter the fire warning light went out. The pilot continued the flight [redacted] on one engine, descended to 20,000 feet, decelerated to 300 KEAS and held this condition on military power on the right engine. At this point, the right aircraft hydraulic system failed. The pilot lowered gear on the normal system using windmill RPM of 1300 on the left engine for hydraulic power. The gear extension cycle under these circumstances took longer than normal, as expected. Due to excessive crosswinds on the runway, the pilot landed the aircraft [redacted]. The landing was reported to be an excellent one with normal chute deployment. A preliminary postflight inspection of the left engine and nacelle area revealed no apparent evidence of a fire. The fire warning light mechanism is being examined to determine if a malfunction of this system may have occurred. Though the above may appear to have been a hazardous flight, the pilot procedure was well defined to cope with each event in the sequence enumerated above. Also, the redundancy of aircraft systems demonstrated their value in flight emergency situations encountered.

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3. The flight of aircraft #123, scheduled for 27 March, was cancelled due to deteriorating weather conditions aloft at the Area.

SIGNED

JOHN PARANGOSKY
Chief, Development Division
(Special Activities)

John Parangosky:C/DD/OSA:huj (28 March 1963)

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